
Evaluation of the Grant Program for Rural Health Care Transition Tenth Semi-Annual Progress Report



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EXECUTIVE SUMMARY

Congress charged the Health Care Financing Administration (HCFA) with implementing a program of Rural Health Care Transition (RHCT) grants (Omnibus Budget Reconciliation Act of 1987: P.L. 100-203) and then expanding the program (Omnibus Budget Reconciliation Act of 1989: P.L. 101-239). The goal of this program is to help small rural hospitals (those with fewer than 100 beds) improve their financial stability and management capacity.

The program was implemented in September 1989 and expanded in September of 1990, 1991, 1992, and 1993. Since the program began, 924 RHCT grants have been awarded: 184 in 1989, 212 in 1990, 187 in 1991, 163 in 1992, and 178 in 1993. More than 40 percent of the small rural hospitals in the United States have received program grants, and Congress has authorized \$96 million in grant program funding during the past 5 years.

The 1989 and 1990 grantees completed their grant projects in September 1992 and September 1993, respectively. Currently, 494 active grantees have 3-year grants and are progressing with their projects.

The legislation mandated that the HCFA Administrator report on the program's progress to Congress every 6 months. This document is the tenth semi-annual progress report. In it, we describe the progress of the 1991 grantees after 27 months and of the 1992 grantees after 15 months. We also discuss the selection of 1993 grantees. The progress chapters are based on monitoring reports submitted by grantees. We also focus on two special topics: (1) documenting the progress of isolated grantees; and (2) understanding why the smallest rural hospitals (those with fewer than 30 licensed beds) fail to show financial improvements from the grant program. These special topics are included because data are now available from the site visits conducted in 1993 and from telephone interviews conducted in spring 1994.

SPECIAL FOCUS: THE PROGRESS OF ISOLATED HOSPITALS

Federal policymakers are concerned about isolated rural hospitals. Congress created the special Medicare payment category for sole community hospitals to help ensure the financial solvency of these institutions (942 CFR 412.92). Congress wants to maintain these institutions because these hospitals are presumed to be the sole source of local inpatient hospital care and may be an important component of maintaining access to health care services in remote areas (OTA, 1990).

Isolated hospitals can fill one critical need by providing emergency medical services. Rural residents have mortality statistics similar to those of their urban counterparts--except that deaths resulting from accidents are 40 percent higher in rural areas (OTA, 1990). People who live in remote areas have a long way to travel if no local hospital exists--and long journeys may mean lost lives. Studies have shown that patients who receive appropriate care within 1 hour after an accident have a much higher probability of survival than those who must wait longer (Rutledge and Bell 1990). Access to isolated hospitals can make a life-saving difference.¹

As part of the evaluation of the 1991 grantees, we conducted case studies on 8 of the 43 isolated hospitals to examine how the grant program is working at these institutions. Case-study grantees were selected on the basis of their geographical area, size of their grant, and reported project progress. Site visits were conducted during 1993--2 years after the grants were awarded. Five of the eight isolated hospitals were located in frontier counties--counties with fewer than six persons per square mile. The other three were in areas that had substantially higher population density but were isolated by geographical barriers. Seven of the eight hospitals had five or fewer physicians on staff; two hospitals had only one doctor each. Only one hospital generated a surplus from operations in the previous fiscal year.

Economic conditions in the areas surrounding isolated hospitals were dismal. Seven local economies depended on only one or two sources of income; all of these economies were stagnant or slowly declining. In all local economies, the hospital was the largest or second-largest employer.

Local health care providers identified mental health and substance abuse services as the most frequent unmet health care need. Communities also identified physician services as an unmet health care need. For communities in which the physician and hospital had decided to stop delivering babies, local providers felt patient access to obstetric services was limited. These providers also generally agreed that the health care needs of elderly people were well met, although providers in three communities felt that elderly individuals needed more home health and/or home support services.

The isolated hospitals are using the grant funds to implement a variety of projects and have had varying degrees of success in implementation. Four hospitals have virtually completed their projects (mental health services, physical therapy clinic, hospital-based physician's clinic, and staff education). Three hospitals have made significant progress toward their goals, while one hospital has accomplished almost nothing. Our most startling finding is that all of these isolated grantees have recruited the health professionals they need for their projects. Even the hospital that has met none of its grant project goals has recruited a

¹Isolated hospitals are defined as those located at a driving distance of at least 45 minutes from the nearest hospital.

physician. The majority of the grantees attributed their successful recruitment to good luck, although two hospitals thought their substantial financial offers contributed to their success.

Despite successful recruiting of health professionals, almost all of the projects have significant problems to overcome before they achieve financial success. The most consistent problem impeding project success is poor communication and the lack of careful planning. Weak communication links between hospital management and local physicians and between hospital management and other health service administrators have hurt seven of the eight grant-funded projects.

SPECIAL FOCUS: THE SMALL-HOSPITAL PARADOX

One finding from the evaluation of 1989 and 1990 grantees was paradoxical: The finances of the smallest hospitals (those with fewer than 30 licensed acute-care beds) failed to improve during the grant period, yet, the majority of hospitals reported that the grant projects helped improve hospital financial status (Wooldridge et al. 1994). To understand the source of this inconsistency, we interviewed 40 administrators at the smallest 1991 and 1992 grantees.

We found that the vast majority (93 percent) of administrators we interviewed thought the grant projects would improve hospital finances. Only 55 percent, however, thought that the financial improvement would be apparent on the hospital's financial statement. Administrators said the improvements would not be evident because (1) the project's financial impacts are mostly long term, not short term; and (2) other hospital changes during the grant period have had a much greater effect on finances than the grant project.

GRANTEE STATUS

Among the 528 hospitals awarded grants in 1991, 1992, and 1993, 494 grants are still active and 34 have ended. Nineteen of the 34 inactive grantees discontinued their grants (6 because the hospital closed), and 15 were reclassified as urban for Medicare prospective payment purposes (making them ineligible to continue in the grant program).

During the past 6 months, no grantees left the program.

Grantee Status	1989	1990	1991	1992	1993
Months Since Award	--	--	27	15	0
Continuing	--	--	162	154	178
Completed	174	181	0	0	0

Grantee Status	1989	1990	1991	1992	1993
Discontinued Grant	6	12	22	7	0
Hospital Closed	4	5	3	2	0
Total Awards	184	212	187	163	178
Total Fiscal Year Funding (Millions)	\$8.3	\$17.8	\$24.4	\$23.0	\$22.8

1991 GRANTEES: PROGRESS AFTER 21 MONTHS

After 21 months, the majority of 1991 grantees remain on schedule. The most frequent grant-supported activities are recruiting (65 percent), equipment purchases (55 percent), and staff training and development (53 percent). One-fourth, and more reported completing construction, equipment purchases, swing bed implementation, and planning and market analyses. Despite this progress, grantees reported being behind schedule in some activities, including recruitment of health professionals. The inability to recruit health professionals has been a constant problem for grantees since the program began.

1992 GRANTEES: PROGRESS AFTER 15 MONTHS

Fifteen months into their projects, the majority (68 percent) of the 1992 grantees are on or ahead of schedule. Only 30 percent are behind by more than 1 month, compared with 40 percent 6 months earlier. Similar to the 1991 grantees, the most frequently pursued projects are recruiting (71 percent), equipment purchases (65 percent), and staff training and development (64 percent). The activity most frequently reported as behind schedule is inpatient services. Inpatient projects were adhering to schedule better than 6 months earlier; only 24 percent were behind schedule in this reporting period, compared with 43 percent in the previous period.

1993 GRANTEE SOLICITATION

In 1992, HCFA received 316 grant applications from 394 hospitals (109 organized into 31 consortia) in 43 states.

Grantees were selected on the basis of merit, with an eye toward equitable geographical distribution across states. On September 30, 1993, HCFA awarded \$8,492,790 to 178 hospitals. Twenty-eight percent of 1993 grantees are in consortia, a higher rate than in 1989 but comparable to rates in more recent years.

Forty-five percent of the grantees are from the Midwest region, reflecting high application rates from this area. The average amount awarded to the 1993 grantees for the first year of their projects was \$47,960--higher than in all previous years.

I. INTRODUCTION

A. LEGISLATIVE HISTORY AND PURPOSE OF THE GRANT PROGRAM

Congressional concerns about the financial and operational viability of rural hospitals and the access of rural residents to health care led to the enactment of the Grant Program for Rural Health Care Transition. In the legislation, Congress mandated that the Health Care Financing Administration (HCFA):

Establish a program of grants to assist eligible small rural hospitals and their communities in the planning and implementation of projects to modify the type and extent of services such hospitals provide in order to adjust for one or more of the following factors:

- (1) Changes in clinical practice patterns
- (2) Changes in service populations
- (3) Declining demand for acute-care inpatient hospital capacity
- (4) Declining ability to provide appropriate staffing for inpatient hospitals
- (5) Increasing demand for ambulatory and emergency services
- (6) Increasing demand for appropriate integration of community health services
- (7) The need for adequate access to emergency care and inpatient care in areas in which a number of underutilized hospital beds are being eliminated . . .

Each demonstration project . . . shall demonstrate methods of strengthening the financial and managerial capability of the hospitals involved to provide necessary services.¹

¹Omnibus Budget Reconciliation Act of 1987 (P.L. 100-203, Section 4005[e]).

Furthermore, the legislation required the HCFA Administrator to report on the progress of the program every 6 months.² This is the tenth report in the series mandated by Congress.

The legislation further stipulated that "a grant may not exceed \$50,000 a year and may not exceed a term of two years."³ Funds could be spent for any expense incurred in planning and implementing a project, with two exceptions: no part of the grant funds could be used to retire debt incurred before the grant award, and no more than one-third of the grant funds could be used to cover capital-related costs. To be eligible for a grant, a hospital had to be a non-Federal, nonproprietary, short-term, general acute-care hospital with fewer than 100 beds and had to be classified as a rural hospital under Medicare's prospective payment system.⁴

In the Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239, Section 6003 [g]), Congress enacted two modifications to the Rural Health Care Transition (RHCT) grant program. First, the grant period for hospitals receiving an award after fiscal year 1989 was extended from 2 to 3 years. Second, hospitals that use their grants to convert to rural primary-care hospitals (as described in Section 1820 of the Social Security Act) or to develop a rural health network (as defined in Section 1820[g] of the Social Security Act) are not limited to the one-third capital expenditure maximum.

²This progress report was prepared by Mathematica Policy Research, Inc., under contracts 500-91-0075 and 500-94-0011 to the Health Care Financing Administration.

³Section 4005(e)(6) of the act.

⁴Section 4005(e)(2) of the act.

The amount of funds appropriated by Congress for the program has varied over the years:

<u>Fiscal Year</u>	<u>Amount</u>
1989	\$ 8.3 million
1990	\$17.8 million
1991	\$24.4 million
1992	\$23.0 million
1993	\$22.8 million

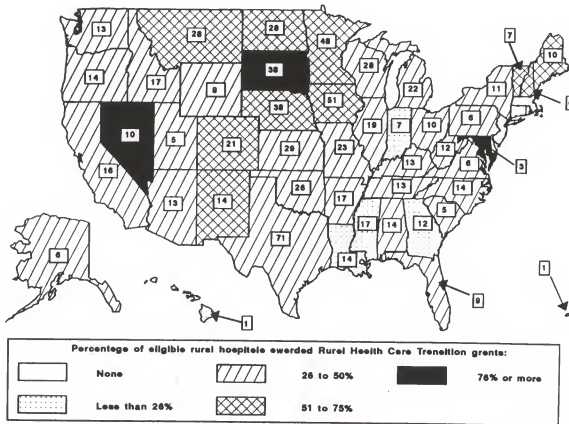
The funds increased from 1989 through 1991, consistent with increases in the number of active grantees each year. Since 1991, the funding level has remained approximately the same-- enough to support the three active cohorts of grantees.

B. THE NUMBER AND DISTRIBUTION OF GRANTEES

HCFA uses two criteria to select RHCT grant recipients: (1) the equitable distribution of funds across states; and (2) reviewers' assessment of project merits. HCFA distributes the bulk of the funds across states in proportion to the number of eligible hospitals. Awards are then made within each state on the basis of merit. The remaining funds are awarded on the basis of merit without regard to state. Under these criteria, 796 hospitals (41 percent of eligible rural hospitals) participated in the RHCT grant program between 1989 and 1993. The state-by-state distribution of the number and percentage of hospitals receiving RHCT grant awards between 1989 and 1993 is shown in Figure I.1.⁵

⁵In 1993, there were 1,960 eligible rural hospitals nationwide.

FIGURE I.1
NUMBER AND PERCENTAGE OF ELIGIBLE HOSPITALS
AWARDED RURAL HEALTH CARE TRANSITION
GRANTS BETWEEN 1989 AND 1993, BY STATE



NOTE: The number of hospitals with Rural Health Care Transition grants is shown on the map. A total of 798 hospitals received Rural Health Care Transition grants between 1989 and 1993. Connecticut, Delaware, Rhode Island, and New Jersey did not have eligible hospitals in 1993. A 1991 grantee in Connecticut was reclassified as an urban hospital and does not appear on the map.

Because the bulk of the funds are distributed equitably across states, the *number* of grantees in a state corresponds roughly to that state's portion of the eligible hospitals nationwide. As Figure I.1 shows, Texas has the largest number of hospitals awarded RHCT grants (71), followed by Iowa and Minnesota, with 51 and 48 grant recipients, respectively. (Texas ranks first, Minnesota ranks third, and Iowa ranks fourth in number of eligible hospitals.)

On the other hand, the *percentage* of eligible hospitals awarded a grant within a particular state may reflect a more organized effort to pursue grants. States with a higher percentage of grants are those winning more of the remaining merit funds. The number and quality of grant applications affect the percentage of winners in each state. An analysis of the percentage of eligible hospitals with grants in each state shows that states with more than 50 percent of the eligible hospitals participating in the grant program are generally clustered in three areas of the country: New England, the Northern plains, and the Mountain region. By contrast, states with the lowest program participation rates are located in the South.

These differences suggest that the aggressiveness with which hospitals pursue RHCT grants may vary by state and region. The impetus for the greater level of effort in some states is unclear. It may reflect efforts of a State hospital association, a regional management firm, or a multihospital system. It may also reflect the willingness of hospitals in certain areas to form consortia when applying for an RHCT grant, thereby attracting hospitals that may not have otherwise applied.

II. IS THE GRANT PROGRAM HELPING ISOLATED HOSPITALS?

Federal policymakers are concerned about isolated rural hospitals. Congress created the special Medicare payment category for sole community hospitals to help ensure the financial solvency of these institutions (942 CFR 412.92). Congress wants to maintain these institutions because these hospitals are presumed to be the sole source of local inpatient hospital care and may be an important component of maintaining access to health care services in remote areas (OTA, 1990).

Isolated hospitals can fill one critical need by providing emergency medical services. Rural residents have mortality statistics similar to those of their urban counterparts--except that deaths resulting from accidents are 40 percent higher in rural areas (OTA, 1990). People who live in remote areas have a long way to travel if no local hospital exists--and long journeys may mean lost lives. Studies have shown that patients who receive appropriate care within 1 hour after an accident have a much higher probability of survival than those who must wait longer (Rutledge and Bell 1990). Access to isolated hospitals can make a life-saving difference.¹

The isolation these hospitals face creates pressures different from those that their less isolated counterparts experience. Isolated hospitals may find it easier to capture the local patient base because the travel costs of using an alternative facility are high. However, these institutions may find it more difficult to recruit health care professionals because professional isolation can be exacerbated by geographical isolation. In addition, isolated hospitals face the

¹Isolated hospitals are defined as those located at a driving distance of at least 45 minutes from the nearest hospital.

same problems as rural hospitals nationwide, but in some cases the problems are even worse. In particular, isolated hospitals with fewer than 26 beds are more financially distressed. They experience greater utilization decreases than all rural hospitals and are increasingly dependent on reimbursement from public programs (Medicaid and Medicare) (Lewin/ICF 1991). It is important to understand isolated institutions' problems and identify ways to help them continue providing health care.

In conducting our case studies of the 1991 grantees, we visited eight isolated hospitals in 1993 to examine how the grant program is working at these institutions. These 8 hospitals were selected from the 43 isolated hospitals that received grants in 1991. The grantees were selected based on geographical representation, the size of their grant awards, and extent of project progress as reported by the hospital. All but one of the hospitals visited were in the West or Midwest, reflecting the geographical distribution of isolated hospitals in the program. We did not visit hospitals that received grants for less than \$15,000 or that reported no project progress.

While on site, we discussed with key staff and community personnel the hospital's service area, unmet health care needs, management, finances, and community support, as well as the goals and progress of the grant project. The interviewees included the hospital administrator, chief financial officer, director of nursing, president of the hospital board of directors, local nursing home administrator, local public health nurse, and any personnel directly involved in the hospital project or operations (such as the town mayor). The material in this chapter is based on the findings of these site visits.

A. WHAT WERE THE CHARACTERISTICS OF THE ISOLATED CASE-STUDY HOSPITALS?

Eight case-study grantees were isolated. Five were located in frontier counties with a population of less than six persons per square mile. The other three were located in areas with substantially higher population density (29 persons or more per square mile), but geographical barriers isolated them.² The three hospitals located in the more densely populated areas ranged in size from 40 to 89 acute-care beds, while those in the frontier areas typically had 14 to 20 beds.³

The hospitals' physician staffs were small. The large, 89-bed hospital had 19 full-time, active staff physicians, but the remaining hospitals had 5 or fewer staff physicians. (Two hospitals had only one doctor each.) Hospital profitability was directly correlated with physician staffing; the one large hospital generated a \$1.2 million surplus from operations, while the other seven had lost money in the previous fiscal year. One hospital lost a modest amount (\$28,000), but the remaining six hospitals lost between \$400,000 and \$1 million. These hospitals used local tax revenue or financial reserves to cover these losses.

Although the isolated hospitals' ownership and management structures were diverse, the day-to-day management processes were quite similar. Four hospitals were publicly owned one of the publicly owned institutions was leased to a nonprofit board. Four hospitals were privately owned (one by a multi-hospital system, one by a private corporation, and two by their

²One hospital was located at the tip of a peninsula, one on a major river with no bridge crossing for 50 miles, and one in a remote mountain area.

³One frontier hospital had 40 beds.

respective nonprofit boards). The multi-hospital system managed the hospital it owned, a contract management firm managed two others (one public and one private), and the remaining five hospitals were independently managed. Despite these variations in ownership and management structure, the administrator, with oversight from the hospital board, made key management decisions at six hospitals. Only two hospitals used a management team to make decisions, and one of these recently instituted the management team concept. For the most part, these hospitals were managed by a single professional administrator with input from a lay board.

B. WHAT WERE THE CHARACTERISTICS OF THE ISOLATED AREAS?

1. The Local Economy

Local economic conditions in the areas surrounding the isolated hospitals were similar. Seven local economies depended on only one or two sources of income, and all were stagnant or slowly declining. One depended on timber and textiles; the textile firms had recently laid off workers. Two relied on oil and ranching. Although ranching income has remained steady in recent years, the oil sector went bust in the early 1980s and never recovered. Another economy was based on ranching and coal mining, while another relied solely on fluorspar mining. These mines were nearing depletion of their resources. Two other economies depended solely on wheat, and poor crop yields had depressed local income in recent years. Another economy was diverse, with a broad base of tourism, shipbuilding, light industry, dairy farms, and fruit crops. A large shipbuilding company had recently down-sized because it lost

key government contracts, and none of the other local industries was growing rapidly enough to absorb the job losses.

In all of these case-study economies, the hospital was typically the largest or second-largest local employer, along with the school system. Many communities view their hospital as a key employer because its jobs pay relatively well and offer some type of health insurance benefits. Interviewers noted that major employers (coal mines, large farms, and oil companies) offered good health insurance, but small business and ranch employers rarely had such benefits.

2. Unmet Health Care Needs

Local health care providers in six of the eight communities identified mental health and substance abuse services as an area with an unmet health care need. Providers offered many explanations for the unmet need. In some areas, providers described a local community in which the only entertainment activities center around children (for example, school plays and Little League games); hence, a main form of local entertainment for those without children is to go to the hills, woods, or quarry to drink. In these communities, providers know a substance abuse problem exists but nobody knows what to do about it. Community providers located on or near an American Indian reservation cited a great demand for mental health and substance abuse services because of the inherent difficulties associated with living on reservations for both Native Americans and others. In other communities, providers said that unmet mental health needs are not due to problems accessing local health care providers, but to problems accessing the mental health care system. These providers argued that distant

specialized providers refuse to accept mentally ill patients, especially Medicaid-covered or uninsured ones.

Four communities identified physician services as an unmet health care need. The physician services needed were diverse. The interviewees surrounding the large isolated hospital with 19 physicians indicated it had too few physicians for its population, resulting in long waiting times for patient appointments and too few preventive services being rendered. In contrast, some providers in areas with few physicians (including those with only one physician) felt that access to general physician services was adequate, but the need for specialized physician services was unmet. In particular, the physician and hospital in three communities had decided to stop delivering babies; providers in these areas felt patient access to obstetric services was limited. Providers were particularly concerned about access to obstetric care for poor people--those for whom the cost of gasoline for the 2-hour (or longer) drive would be prohibitive. Physicians and hospitals in these communities explained that the combination of the high costs of maintaining obstetric services and low demand (making it difficult to maintain quality) made delivering babies locally impractical.

When asked about unmet health care needs for the elderly population, local providers generally agreed that these needs were well met. All communities felt that they had adequate nursing home facilities and that elderly people had access to adequate physician services (or access comparable to that of the younger community). Providers in three communities felt that elderly people needed more home health and/or home support services, especially to help with home chores or medication administration. Two other communities lacked public

transportation; local providers cited this as a problem for elderly individuals. However, providers in similar communities without public transportation did not view this lack as problematic--because church groups and family members generally provided necessary transportation.

C. WHAT PROJECTS ARE THE ISOLATED HOSPITALS PURSUING AND HOW WELL ARE THEY PROGRESSING?

Isolated hospitals are implementing a variety of projects with their RHCT grant funds. Five hospitals are pursuing single-objective projects, including establishing a physical therapy clinic, rural health clinics (two hospitals), mental health services, and a hospital-based physician practice. All of these projects required hospitals to recruit health professionals (physicians, mid-level practitioners, or physical therapists). The remaining three grantees are pursuing multi-objective projects. One focuses on staff education; its objectives include educating the hospital board, extending a health education loan program for off-site education, cross-training nurses in radiology, establishing a satellite hookup for staff and community education, and training all hospital staff to conduct fund-raising activities. The other two multi-objective projects are less focused. One hospital is undertaking joint planning with three other hospitals, enhancing discharge services, and establishing a hospice program and a rural health clinic (including the recruitment of a nurse practitioner). The other is conducting a community survey, updating the emergency room services, recruiting a physical therapist and a physician, and establishing a community education program.

At the time of our site visits (approximately 2 years after grant receipt), the grantees had shown varying degrees of success in implementing their projects. Four hospitals had virtually completed their projects (mental health services, a physical therapy clinic, a hospital-based physician clinic, and a staff education project). Three hospitals had made significant progress toward their goals, while one had accomplished almost nothing. The most startling finding is that all of these isolated hospitals had recruited the health professionals they needed for their projects, even though recruitment problems have continuously hampered project progress for other grantees (Giggie et al. 1993). One would expect that these isolated grantees would have had more difficulties recruiting health care professionals than their nonisolated counterparts. Yet even the hospital that had achieved virtually none of its grant goals had recruited a physician—a long-time friend of the community's sole physician who decided to join his friend's practice before the hospital started recruitment efforts.

The majority of the grantees attributed their successful recruiting efforts to good luck. Two hospitals thought their substantial financial offers contributed to their success (both offered the family practice physician a salary guarantee of \$150,000 per year). The hospital located in the tourist area attributed its successful recruitment to the natural beauty of the area. Physicians vacationing in the area regularly stop by the hospital to ask about possible job openings because they enjoy the scenic area.

Although these hospitals successfully recruited health professionals, almost all of the projects still face significant problems. These problems must be overcome before the projects will be a financial success. The most consistent problem impeding project success is poor

communication, exacerbated by a lack of careful planning. Weak communication links between hospital management and local physicians and between hospital management and other health service administrators have hurt seven of the eight grant-funded projects.

Among the five grantees that completely implemented their projects, only the staff education project was unaffected by communication difficulties. Thus far, the hospital has conducted education sessions for its board, staff, and community; extended loans to two hospital employees to seek further training; cross-trained a nurse for radiology services; and contracted for satellite equipment and educational programs. Fewer staff than anticipated participated in the education programs; some staff had quit off-site educational programs in midstream because they couldn't endure the travel time. However, the hospital feels that the program has been successful because some staff have increased their skill levels and are using their improved skills at the hospital.

In contrast, the grantee that established mental health services encountered disaster. The hospital successfully recruited a psychiatrist to the area, who energetically undertook the task of establishing a mental health service system. The hospital expected the psychiatrist to establish a profitable private practice. The community is poor, however, and few people have the resources or the insurance coverage to pay for private psychiatric services. The psychiatrist envisioned her job as meeting community needs by creating a mental health system with communication links between schools, social welfare services, and health care services, and by helping the community develop a system to meet some of these needs with lower-level

social welfare staff. Although this vision was laudable, the RHCT grant was too small to fund such an effort and the hospital lost money on it.

The hospital and psychiatrist eventually realized that they had different goals. They jointly decided that the hospital would pursue further grant funding to support the psychiatrist. A local congressman convinced the hospital that it would receive a large Federal grant to support its efforts, so the hospital hired another mental health professional to work with the psychiatrist. However, the grant application was rejected. The hospital, which at this point had lost at least \$400,000 on the project, decided to terminate the psychiatrist's employment.

This termination angered the community--especially the local social service and health care providers who used the psychiatrist's services. These providers felt that if they had been given enough advance warning about the problem, they might have been able to find funds to support the program. Instead, the hospital lost community respect in addition to money.

Other hospitals experienced communication difficulties with local physicians that hampered project success. The grantee establishing a hospital-based physicians' clinic ran into opposition from local physicians, who felt that hospital-based physicians would have an unfair competitive advantage. The hospital thought it had negotiated a successful compromise with the community-based physicians by offering to recruit physicians for their practices. The hospital recruited six physicians--three for community-based practices and three for the hospital-based one--and thought the project was working well. However, it got a surprise when the community-based surgeon and his newly recruited partner announced they were opening an

outpatient surgical center to compete with the hospital. The hospital fears that it will lose a significant part of its profitable business and is not sure what to do in response.

Another hospital put its plans for a rural health clinic on hold after the long-established local physician refused to retire as planned. The continuation of this physician's practice made it impossible for the newly recruited doctor to establish a practice in a town that can only support one physician. Another hospital opened a rural health clinic but has had low patient volume because few people know the clinic exists. The administrator is afraid to advertise the clinic for fear that the local physician will be provoked into actively campaigning against it. Another grantee dropped its goal of recruiting a physical therapist after one of two local physicians told the press and the hospital board, "I don't know why you're bothering to recruit a physical therapist--nobody has ever seen one do any good."

Communication difficulties with other health care administrators also thwarted project progress. Before starting a physical therapy clinic, one grantee hospital administrator contacted the local Indian Health Service (IHS) hospital to determine if it would refer patients to the clinic. The IHS hospital had closed its physical therapy department because it lacked a physical therapist. The IHS hospital indicated that it would refer patients but to date has referred very few. When interviewed, the IHS administrator stated that the IHS had very little funding for off-site physical therapy services; in addition, the IHS intended to establish its own physical therapy service when it had completed a new hospital building in the near future. Another hospital administrator spent more than 18 months contemplating whether a proposed rural health clinic would be financially viable. Just as the administrator made the decision to

go forward with the project, the local public health department announced that it had received a Federal grant to establish a rural health clinic. The area cannot support two clinics, and the administrator did not know that the health department was planning to establish a rural health clinic. Still another grantee halted a joint planning project with two other hospitals after one administrator decided the chosen consultant could not be trusted and refused to participate further. The two remaining hospitals eventually decided to move ahead without the third one. These types of communication problems have made it difficult to achieve intended project outcomes.

In summary, isolated grantees have made significant project progress. Despite their locations and dismal local economies, these hospitals have recruited all the health care professionals needed for their projects. Although they have had implementation successes, the hospitals still face communication obstacles that threaten project success. Whether the RHCT grant program can help isolated hospitals depends on whether grantees can overcome these communication difficulties.

D. ISOLATED HOSPITALS: THEIR FUTURE AND THE ROLE OF THE GRANT PROJECTS IN SHAPING IT

A key goal of the RHCT grants program is to help small rural hospitals adapt to changes in health care delivery. What hospitals have accomplished thus far may not be as important as where they are heading. We asked the administrators and board representatives of the isolated hospitals how they saw their institution in the future. Administrators and board

members share the same view of their hospital's future in only three of the eight case studies, again suggesting that communication may be a critical problem for these institutions.

Few key management personnel thought their institutions would be different in the future. None of the eight grantees were considering converting, although one grantee recently consolidated with another hospital. Many management personnel argued that as long as local governments could cover their financial losses, the hospitals should remain as is--small, full-service institutions. A common theme was that the distance local residents would have to travel to another hospital was too far, so the hospital had to remain as is to meet local residents' needs. Some key staff thought their institutions should down-size, but others argued that the hospital needed to expand. None of these institutions had concrete plans to down-size--not even the 20-bed hospital that averaged one acute-care inpatient every 10 days. For the near future, these hospitals intend to continue as is.

By increasing hospital revenue, the grant projects will probably contribute to these goals of maintaining the status quo. As a component of their projects, seven of the eight grantees recruited health care practitioners, and three of these grantees established rural health clinics for these practitioners. The hospitals expect these health care providers to generate more revenue for their institutions, and the rural health clinics are also expected to enhance reimbursement levels. These grant projects should improve finances and help maintain access to health care in isolated areas, but only if grantees improve their communication and coordination.

III. SELF-REPORTED PROGRESS OF 1991 GRANTEES

The fifth progress report from 1991 grantees (covering July 1, 1993 through December 31, 1993) was due on February 9, 1994. This chapter is based on the progress of the 161 grantees whose reports were processed in time for this report.

A. STATUS OF 1991 GRANTEES

No grantees left the program in the previous 6 months. Of the original 187 grantee hospitals, 162 (87 percent) were still active after 27 months. (See Table III.1.)

B. PROGRESS OF 1991 GRANTEES

At the end of 27 months, the 1991 grantees continued to overcome difficulties and to remain largely on or ahead of schedule. Three percent had completed all their activities, 65 percent were ahead or on schedule, and 32 percent were a month or more behind schedule. (See Table III.2.) More than two-thirds attributed project success to availability of funds. Many grantees also recognized cross-organizational support and dedicated or experienced personnel as important to the success of their projects. The most common problem faced by 1991 grantees was difficulty in recruiting and retention.

The most frequent project activity during the previous 6 months was staff recruitment, with 104 grantees (65 percent) pursuing this project. Other frequent activities included equipment purchases (89 grantees), training or staff development (85 grantees), planning or market analysis (72 grantees), and education, prevention, or wellness programs (71 grantees).

TABLE III.1
1991 GRANTEE STATUS

	At Award 9/15/91	Month 3 1/1/92	Month 9 7/1/92	Month 15 1/1/93	Month 21 7/1/93	Month 27 1/1/94	Cumulative 1/1/94
Number of Grantees at Start of Period	187	184	183	172	172	162	187
Number of Discontinuations in Period	1 ^a	1 ^d	12 ^g	0	8 ⁱ	0	22
Number of Hospitals Ceasing Operations and Discontinuing in Period	2 ^b	0	0	0	1 ^j	0	3
Number Remaining at End of Period	184	183	172	172	162	162	162
Other Changes							
Ceased hospital operations but still a grantee	1 ^c	3 ^e	0	0	0	0	4
Changed scope	0	1 ^f	3 ^h	0	1 ^k	1 ^l	6

^aBonner General Hospital, Idaho

^bJohn MacDonald Hospital, Iowa
Moshannon Valley Community Hospital, Pennsylvania

^cMcCone County MAF and Nursing Home, Montana

^dRobersonville Medical Center, North Carolina
(Facility Closed)

^eSt. John Hospital, Kansas
Mercy Forest Glen, Oregon
Prairie Community Home and Nursing Home, Montana

^fHardin County General Hospital, Illinois

^gGordon Hospital, Georgia
Fostoria Community Hospital, Ohio
(Also a 1992 Grantee)
Lee Memorial Hospital, Texas
Walton Regional Hospital, Florida
Kentucky River Medical Center, Kentucky
Putnam County Hospital, Indiana
Claiborne County Hospital, Mississippi
Fallon Medical Complex, Montana
Hamilton County General Hospital, Texas
Mercy Hospital, North Dakota
(Member of Consortium 33)
Towner County Memorial Hospital, North Dakota
(Member of Consortium 33)
Day Kimball Hospital, Connecticut

^hLawrence County Hospital, Mississippi
Down East Community Hospital, Maine
Blue Ridge Hospital System, North Carolina

ⁱOneida County Hospital, Idaho
Hillcrest Hospital, Mississippi
Abrom Kaplan Memorial Hospital, Louisiana
Cooper County Memorial Hospital, Missouri
Garrison Memorial Hospital, South Dakota
Pioneer Memorial Hospital, South Dakota
Yoakum Community Hospital, Texas
Ivinson Memorial Hospital, Wyoming

^jRenville-Bottineau Memorial Hospital, North Dakota

^kCrockett County Hospital, Texas

^lHardin County General Hospital, Illinois

TABLE III.2
PROJECT PROGRESS AFTER 27 MONTHS, BY OBJECTIVE:
1991 GRANTEES

Project Objective	Total Number	Percentage Completed	Percentage Ahead of Schedule	Percentage on Schedule	Percentage Behind Schedule by More than One Month
Recruiting	104	20	4	53	23
Equipment Purchase	89	25	0	65	10
Training or Staff Development	85	14	2	74	9
Planning or Market Analysis	72	24	1	67	8
Education, Prevention, or Wellness Programs	71	6	0	89	6
Rural Health Network ^a	53	9	2	66	23
Clinic	50	12	4	72	12
Construction or Renovation	45	38	4	56	2
Outpatient Service	37	16	3	73	8
Management Improvements	30	3	0	90	7
Inpatient or Hospice Service	22	18	0	68	14
Other	18	11	0	72	17
Emergency Medical Services	15	7	0	93	0
Swing Beds	11	27	0	73	0
Other Health Service	4	25	0	75	0
Total	161	3	1	64	32

SOURCE: Fifth Grantee Monitoring Report, 1991 grantees.

NOTES: Percentages may not total 100 percent because of rounding error. Only grantees that were still active at the end of 21 months are included.

Progress is defined by the project's most delayed activity. For example, a project that is on schedule in only one activity and ahead of schedule in all the rest is defined to be on schedule.

^aThese rural health networks include hospital consortia, as well as formal and informal networks.

The 1991 grantees were most likely to have completed construction and renovation projects. Thirty-eight percent of these projects were complete after 27 months. Other projects likely to be completed as of 27 months were swing bed implementation, equipment purchases, and planning and market analyses. Each of these activities was completed by one-fourth or more of the grantees pursuing it.

After 27 months, recruitment projects were among those most likely to be behind schedule, with 23 percent behind schedule by 1 month or more. More than two-thirds of these grantees attributed delays to difficulties in recruiting health care professionals to rural areas. Hospitals reported problems recruiting a wide variety of health care professionals, including psychiatrists, registered nurses, and physical therapists. Some hospitals encountered difficulties because they were looking for physicians to fill more than one role. For example, one hospital is recruiting a family practitioner who will also serve as emergency medical director. A few grantees had to recruit more than once because a previously recruited physician left the area. One hospital had a signed contract with a physician, but the physician never showed. Only a small number of grantees were behind schedule for internal reasons, such as staff resistance or a change in administrator.

Twenty-three percent of the rural health network projects were behind schedule after 27 months. These projects include hospital consortia projects, as well as other formal and informal networking efforts. A few were behind as a result of difficulties in recruiting necessary staff. Other reasons for delays included the illness of the project director, rejection

of a network's grant funding application, and the unavailability of a building for consolidated health care services.

C. PROJECT MODIFICATIONS AND PROBLEMS ENCOUNTERED

One hospital has changed its project goal from opening a rural health clinic to developing a physical therapy department. This grantee's original goal was to develop its physical therapy resources, but after seeing a need for a rural health clinic, the grantee changed its project. Before the hospital implemented this new goal, the local health department won a grant to open a rural health clinic. Because the area could not support two clinics, the grantee has returned to its original goal.

D. GRANT EXPENDITURES

HCFA awarded a total of \$23,030,967 to the 1991 grantees in the 3 years of their grant period--\$8,173,669 for the first year, \$7,697,920 for the second year, and \$7,159,378 for the third year. Twenty-seven months after HCFA made the awards, the reporting hospitals had spent \$15,910,364.¹

Consistent with earlier grantees, the 1991 grantees reported spending more of their grants (38 percent) on salary and fringe benefits than on any other category. Cumulative expenditures by category included:

- Salary and fringe benefits: \$6,068,516 (38 percent)

¹This figure and other grant expenditure figures cited in this chapter include all amounts reported by 1991 grantees since the beginning of the program.

- Equipment and capital: \$2,549,380 (16 percent)
- Nonphysician contracts: \$2,491,907 (16 percent)
- Physician contracts: \$2,031,869 (13 percent)
- Supplies: \$652,487 (4 percent)
- Travel: \$450,453 (3 percent)
- Other: \$1,665,752 (10 percent)

Capital items purchased by the 1991 grantees included office furniture, physical therapy equipment, computer hardware and software, and satellite equipment (used for receiving staff training broadcasts). Expenditures on nonphysician contracts included speaker fees for training sessions and payments to physical therapy firms, physician assistants, and a state university (for satellite training broadcasts).

IV. SELF-REPORTED PROGRESS OF 1992 GRANTEES

The third progress report from 1992 grantees (covering July 1, 1993 through December 31, 1993) was due on February 9, 1994. This chapter is based on the progress of the 152 grantees whose reports were processed in time for this report.

A. STATUS OF 1992 GRANTEES

During the previous 6 months, no grantees left the program. One hundred and fifty-four (94 percent) of the original 163 grantee hospitals were still participating in the grant program after 15 months. (See Table IV.1.)

B. PROGRESS OF 1992 GRANTEES

The 1992 grantees have continued to make considerable progress and, after 15 months, appear to be overcoming their start-up problems. Only 30 percent were behind by more than one month, compared with 40 percent in the previous reporting period. Sixty-eight percent were on or ahead of schedule, and two percent completed all planned project activities. Overall, the 1992 grantees were more likely to be on or ahead of schedule than earlier grantees after 15 months (Cheh et al. 1993). More than three-fourths of the respondents identified the availability of financial resources as an important element of successful projects, and more than 50 percent attributed their success to dedicated and experienced personnel. Although more than half stated that cross-organizational cooperation contributed to project

TABLE IV.1
1992 GRANTEE STATUS

	At Award 9/15/92	Month 3 1/1/93	Month 9 7/1/93	Month 15 1/1/94	Cumulative 7/1/93
Number of Grantees at Start of Period	163	163	154	154	163
Number of Discontinuations in Period	0	0	7 ^c	0	7
Number Remaining at End of Period	163	162	154	154	154
Other Changes					
Ceased hospital operations but still a grantee	2 ^a	0	1 ^d	0	3
Changed scope	0	0	0	1 ^e	1

^aSea Level Hospital, North Carolina
Dahl Memorial Healthcare Association, Montana

^bAlfalfa County Hospital, Oklahoma
Estelline Community Hospital, South Dakota

^cFranklin County Medical Center, Idaho
Dimmit County Hospital, Texas
Melissa Memorial Hospital, Colorado
Sedgwick County Memorial Hospital, Colorado
St. John's Lutheran Hospital, Montana
Wedowee Hospital, Alabama
Fostoria Community Hospital, Ohio

^dRoosevelt Memorial Medical Center, Montana

^eLake City Hospital, Minnesota

success, one of the most common reasons given for falling behind schedule was lack of cross-organizational coordination. Lack of personnel and administrative difficulties were also common reasons for falling behind.

The 1992 grantees' most frequent grant project activities were recruitment (108 grantees), equipment purchases (99 grantees), and training and staff development (98 grantees). Other frequent activities included education, prevention, or wellness programs (63 grantees) and planning or market analyses (60 grantees). (See Table IV.2.)

The 1992 grantees were most successful at completing equipment purchases and renovations--similar to the 1991 grantees after 15 months. Thirty-four percent of the 99 hospitals that planned equipment purchases had done so after 15 months, and 33 percent of the 33 hospitals that planned construction or renovation had completed the activity after 15 months. Unlike the 1991 grantees after 15 months, however, many 1992 grantees also had success in health professional recruitment. One-third of the 108 grantees that planned recruitment reported completing the activity after 15 months. The remaining 1992 grantees pursuing health professional recruitment were more likely to be on or ahead of schedule than the 1991 grantees after 15 months (Cheh et al. 1993).

Consistent with earlier reports submitted by preceding cohorts of grantees, hospitals that introduced new services adhered largely to schedule. For example, 100 percent of the emergency medical service projects and 92 percent of the education, prevention, or wellness projects were either ahead of or on schedule. Additionally, 93 percent of the management improvement projects were ahead of or on schedule.

TABLE IV.2
PROJECT PROGRESS AFTER 15 MONTHS,
BY OBJECTIVE: 1992 GRANTEES

Project Objective	Total Number	Percentage Completed	Percentage Ahead of Schedule	Percentage on Schedule	Percentage Behind Schedule by More than One Month
Recruiting	108	33	1	50	16
Equipment Purchase	99	34	1	57	8
Training or Staff Development	98	8	1	85	6
Education, Prevention, or Wellness Programs	63	3	0	92	5
Planning or Market Analysis	60	13	0	75	12
Rural Health Network ^a	54	24	2	63	11
Outpatient Service	42	2	5	83	10
Management Improvements	42	5	2	91	2
Construction or Renovation	33	33	3	42	21
Clinic	31	23	3	52	23
Inpatient or Hospice Service	21	5	0	71	24
Other Health Service	17	6	0	77	18
Emergency Medical Services	6	0	17	83	0
Swing Beds	2	0	0	100	0
Other	33	6	0	70	24
Total	152	2	0	68	30

SOURCE: Third Monitoring Report, 1992 grantees.

NOTES: Percentages may not total 100 percent because of rounding error. Only grantees that were still active at the end of 9 months are included.

Progress is defined by the project's most delayed activity. For example, a project that is on schedule in only one activity and ahead of schedule in all the rest is defined to be on schedule.

^aThese rural health networks include hospital consortia, as well as formal and informal networks.

Grantees that implemented inpatient or hospice services were the most likely to experience delays (24 percent). These projects were doing better than 6 months earlier, when 43 percent of the grantees implementing inpatient or hospice projects were behind schedule. This pattern is similar to that of the 1991 grantees. Most of the 1991 grantees that implemented these types of projects and were either behind schedule or incomplete after 9 months overcame initial delays within a year.

Twenty-four percent of the grantees pursuing "other" projects were behind schedule on one or more these projects. Projects in this category that were behind schedule were diverse; they included developing a newsletter, a cardiac rehabilitation center, and a facility assessment. Delays were due largely to either external forces (such as community opposition, lack of county commissioners' approval, or diminished state involvement) or to internal organizational problems (such as a change in administrator or a need for a project coordinator).

C. PROJECT MODIFICATIONS AND PROBLEMS

Hospitals have modified their projects in several ways. One hospital in Minnesota changed the scope of its efforts and abandoned two parts of its original three-part project. Instead of integrating the hospital and nursing home and developing assisted-living housing, it has put all of its grant funds and efforts into physician recruitment and retention. Because of the retirement of one physician and the serious illness of another, the community has gone from four doctors to two. This change caused the grantee to redirect the grant funds entirely to physician recruitment.

D. GRANT EXPENDITURES

The Health Care Financing Administration (HCFA) awarded a total of \$13,469,240 to the 1992 grantees in the first 2 years--\$6,855,659 for the first year and \$6,613,581 for the second. Fifteen months after HCFA made the awards, the reporting hospitals had spent \$7,839,884.¹

The grantees reported spending more of their grants (40 percent) on salary and fringe benefits than on any other category, a pattern of expenses similar to that of prior grantees. Cumulative expenditures by category included:

- Salary and fringe benefits: \$3,127,006 (40 percent)
- Equipment and capital: \$1,287,639 (16 percent)
- Nonphysician contracts: \$1,125,341 (14 percent)
- Physician contracts: \$790,263 (10 percent)
- Supplies: \$326,813 (4 percent)
- Travel: \$327,470 (4 percent)
- Other: \$855,352 (11 percent)²

The 1992 grantees purchased capital items, including renovation materials, computer equipment, furniture, physical therapy equipment, and media equipment (such as overhead projectors and televisions). They also used grant funds to pay for such nonphysician contracts as advertising and health services consultants, as well as contracts with individuals to provide educational and staff development seminars.

¹This figure and other grant expenditure figures in this chapter include all amounts reported by 1992 grantees since the beginning of the program.

²Percentages do not total 100 percent because of rounding error.

V. 1993 GRANT SOLICITATION PROCESS AND APPLICANT CHARACTERISTICS

A. SOLICITING AND SCORING THE APPLICATIONS AND SELECTING GRANTEEES

The Health Care Financing Administration (HCFA) solicited applications to the 1993 Rural Health Care Transition (RHCT) grants program by sending letters and application forms to more than 2,500 rural, nonprofit hospitals. To be eligible for a grant, a hospital had to be a non-Federal, non-proprietary, short-term, general acute-care hospital with fewer than 100 beds and had to be classified as a rural hospital under Medicare's prospective payment system.¹ Hospitals that received grants in 1991 or 1992 and accepted maximum grant funding for their continuation in 1993 were ineligible.² HCFA received 316 proposals, 285 from individual hospitals and 31 from 109 hospitals organized into consortia.³

Technical panels reviewed and scored the applications on the basis of five criteria mandated by Congress, including an applicant's understanding of its problems, the likelihood of a successful impact resulting from the grant, the project's potential for improving access to care, the degree of community coordination demonstrated, and the project's potential to reduce Medicare expenditures. The panels submitted scores to HCFA in June 1993. The

¹P.L. 100-203, Section 4005(e).

²Because the 1989 and 1990 RHCT grantees had completed their grant projects, they were eligible to apply for the 1993 grants program. Any 1991 or 1992 grantees that gave up their grant funding or had less than maximum grant funding were also eligible to apply for the 1993 grants program. A total of eighteen 1989 grantees, forty 1990 grantees, five 1991 grantees, and eight 1992 grantees received 1993 awards.

³We counted each consortium proposal only once.

scores were then normalized using standard statistical techniques to account for panel variation.⁴

HCFA used two guidelines to select grant award winners: (1) merit (as reflected by proposal scores); and (2) the equitable distribution of funds across states. The same two-stage process was used to select 1993 and previous grantees. Across states, HCFA allocated funds in proportion to the number of eligible hospitals. Within states, awards were made on the basis of merit, up to the state ceiling. HCFA then awarded the remaining funds on the basis of merit without regard to state. Because some states had few applicants, which could all have been selected at the first stage, only proposals deemed acceptable for award by the technical panels were awarded grants.

HCFA awarded 178 grants to 178 hospitals--129 grants to individual hospitals and 49 grants to hospitals in 13 consortia.⁵ State grant pools accounted for awards to 106 hospitals. The national pool accounted for awards to 72 hospitals. HCFA awarded a total of \$8,492,790 to the 178 grantees. Appendix A lists the 1993 grantees and their first-year grant amounts, by state.

⁴See Appendix B for information on the score adjustment process.

⁵The application for Orange City Hospital in Iowa was approved but not funded because no funding was requested. As a result, HCFA approved a total of 179 applications.

B. GEOGRAPHIC DISTRIBUTION OF THE APPLICANTS

HCFA received 316 proposals from 394 applicants for the 1993 RHCT grants program (see Table V.1). Only 20 percent of eligible hospitals applied for grants.⁶ Applications came from 43 of 46 states with eligible hospitals.⁷

The highest application rate occurred in the West North Central census division, where 29 percent of eligible hospitals applied for grants.⁸ Two states in this division, Minnesota (in which 38 percent of eligible hospitals applied) and South Dakota (in which 59 percent of eligible hospitals applied), are largely responsible for this high rate. Elsewhere, more than one-third of eligible hospitals in Maryland and West Virginia applied for grants. Minnesota, with 95 eligible hospitals, had the most applications (36) of any state.

The Essential Access Community Hospital and Rural Primary Care Hospital (EACH/RPCH) Program may account for the high application rates in two states. South Dakota and West Virginia are members of the seven-state EACH/RPCH Program. The program may have generated additional information about or interest in the RHCT grants program in these two states, compared with other states. In addition, small primary care

⁶HCFA supplied counts of eligible hospitals by State. The total number was 1,960 eligible hospitals, as shown in Table V.1.

⁷This does not include Puerto Rico, which has three eligible hospitals. Three states with eligible hospitals had no applicants for an 1993 RHCT grant. These states included Hawaii (with 8 eligible hospitals), Massachusetts (with 2 eligible hospitals), and Utah (with 19 eligible hospitals).

⁸In addition, 23.6 percent of the eligible hospitals in this census division already had grants continuing beyond 1993.

TABLE V.1

GRANT PROGRAM FOR RURAL HEALTH CARE TRANSITION: ELIGIBLE HOSPITALS, PROPOSALS RECEIVED, AND AWARDS

Census Division and State	Number of Eligible Rural Hospitals	Percentage of Eligible Hospitals Nationwide	Number of Proposals Received	Number of Hospitals that Applied	Percentage of Eligible Hospitals that Applied	Number of Awards	Percentage of Eligible Hospitals Awarded Grants	Funding Level (\$)	Percentage of Total Funding
New England									
Maine	17	0.87	4	5	29.41	1	5.88	50,000	0.59
Massachusetts	2	0.10	0	0	0.00	0	0.00	0	0.00
New Hampshire	11	0.56	1	2	18.18	1	9.09	49,500	0.58
Vermont	10	0.51	1	2	20.00	1	10.00	49,500	0.58
Total	40	2.04	6	9	22.50	3	7.50	149,000	1.75
Middle Atlantic									
New York	30	1.53	4	4	13.33	1	3.33	49,500	0.58
Pennsylvania	15	0.77	2	2	13.33	1	6.67	50,000	0.59
Puerto Rico	3	0.15	0	0	0.00	0	0.00	0	0.00
Total	48	2.45	6	6	12.50	2	4.17	99,500	1.17
South Atlantic									
Florida	23	1.17	4	4	17.39	2	8.70	100,000	1.18
Georgia	75	3.83	7	9	12.00	2	2.67	100,000	1.18
Maryland	3	0.15	2	2	66.67	1	33.33	50,000	0.59
North Carolina	42	2.14	8	9	21.43	2	4.76	100,000	1.18
South Carolina	18	0.92	2	3	16.67	1	5.56	50,000	0.59
Virginia	22	1.12	3	3	13.64	3	13.64	150,000	1.77
West Virginia	26	1.33	9	10	38.46	4	15.38	199,500	2.35
Total	209	10.66	35	40	19.14	15	7.18	749,500	8.83
East South Central									
Alabama	45	2.30	6	11	24.44	8	17.78	384,688	4.53
Kentucky	49	2.50	10	14	28.57	5	10.20	242,434	2.85
Mississippi	68	3.47	5	5	7.35	3	4.41	136,718	1.61
Tennessee	49	2.50	7	7	14.29	2	4.08	100,000	1.18
Total	211	10.77	28	37	17.54	18	8.53	863,840	10.17
West South Central									
Arkansas	47	2.40	8	8	17.02	5	10.64	243,949	2.87
Louisiana	56	2.86	6	6	10.71	1	1.79	50,000	0.59
Oklahoma	69	3.52	6	6	8.70	4	5.80	181,500	2.14
Texas	177	9.03	27	27	15.25	13	7.34	645,000	7.59
Total	349	17.81	47	47	13.47	23	6.59	1,120,449	13.19

TABLE V.1 (continued)

Census Division and State	Number of Eligible Rural Hospitals	Percentage of Eligible Hospitals Nationwide	Number of Proposals Received	Number of Hospitals that Applied	Percentage of Eligible Hospitals that Applied	Number of Awards	Percentage of Eligible Hospitals Awarded Grants	Funding Level (\$)	Percentage of Total Funding
West North Central									
Iowa	91	4.64	17	23	25.27	17	18.68	850,000	10.01
Kansas	102	5.20	14	19	18.63	1	0.98	50,000	0.59
Minnesota	95	4.85	32	36	37.89	12	12.63	567,276	6.68
Missouri	53	2.70	7	7	13.21	4	7.55	179,050	2.11
Nebraska	74	3.78	18	24	32.43	11	14.86	476,586	5.61
North Dakota	40	2.04	10	11	27.50	5	12.50	247,048	2.91
South Dakota	49	2.50	8	29	59.18	17	34.69	765,920	9.02
Total	504	25.71	106	149	29.56	67	13.29	3,135,880	36.92
East North Central									
Illinois	57	2.91	7	7	12.28	2	3.51	93,000	1.10
Indiana	31	1.58	2	2	6.45	1	3.23	50,000	0.59
Michigan	56	2.86	5	5	8.93	3	5.36	150,000	1.77
Ohio	32	1.63	5	5	15.63	1	3.13	50,000	0.59
Wisconsin	57	2.91	11	13	22.81	6	10.53	269,944	3.18
Total	233	11.89	30	32	13.73	13	5.58	612,944	7.22
Mountain									
Arizona	28	1.43	4	6	21.43	4	14.29	160,000	1.88
Colorado	41	2.09	9	9	21.95	6	14.63	298,300	3.51
Idaho	34	1.73	6	6	17.65	2	5.88	99,992	1.18
Montana	47	2.40	6	10	21.28	2	4.26	98,178	1.16
Nevada	11	0.56	1	3	27.27	3	27.27	140,000	1.65
New Mexico	26	1.33	4	8	30.77	7	26.92	315,590	3.72
Utah	19	0.97	0	0	0.00	0	0.00	0	0.00
Wyoming	20	1.02	4	5	25.00	2	10.00	99,873	1.18
Total	226	11.53	34	47	20.80	26	11.50	1,211,933	14.27
Pacific									
Alaska	18	0.92	3	3	16.67	2	11.11	100,000	1.18
California	47	2.40	5	8	17.02	3	6.38	149,744	1.76
Hawaii	8	0.41	0	0	0.00	0	0.00	0	0.00
Oregon	29	1.48	7	7	24.14	2	6.90	100,000	1.18
Washington	38	1.94	9	9	23.68	4	10.53	200,000	2.35
Total	140	7.14	24	27	19.29	11	7.86	549,744	6.47
National Total	1,960	100.00	316	394	20.10	178	9.08	8,492,790	100.00

SOURCE: National Biosystems.

NOTE: The application for Orange City Hospital in Iowa was approved by HCFA but not funded, since no funding was requested. The total number of approved applications is 179.

hospitals may have been able to apply to the transition grant program because their alliance with larger essential access community hospitals afforded them access to additional resources, such as professional grant writers. Alternatively, successful grant applications in earlier years may have enhanced participation in South Dakota and West Virginia. The success rate for applicants from these states was fairly high in 1989, and application rates have been high ever since. In contrast, Texas had a high application rate in 1989 but a relatively low award rate; the application rate has fallen steadily ever since (Cheh et al. 1990).

The lowest application rate occurred in the Middle Atlantic census division, where 13 percent of eligible hospitals applied for grants.⁹ Elsewhere, individual states had low or zero application rates. None of the 29 eligible hospitals in three states (Hawaii, Massachusetts, or Utah) applied to the grant program in 1993. Other states with low application rates included Indiana (6 percent), Mississippi (7 percent), and Michigan (9 percent). In Texas, which had the largest number of eligible hospitals nationwide, only 15 percent of eligible hospitals applied.

C. FEDERAL AND EXTERNAL FUNDING AND LOCAL COOPERATION

1. Federal Funding Amounts

Most of the 316 proposals to the 1993 RHCT grants program requested 3 years of funding. The 1993 applicants requested \$18,312,700 for the first year, \$17,310,409 for the second year, and \$16,872,075 for the third year. Funding requests for the second and third

⁹However, 17 percent of the eligible hospitals in this division already had grants continuing beyond 1993.

years were lower than those for the first year for two reasons: (1) some hospitals planned to complete their projects in fewer than 3 years; and (2) some hospitals expected their project revenues to increase during the 3-year period, offsetting their need for Federal subsidies.

The funds requested exceeded the amount available for the program. HCFA used the selection process described earlier to choose the 1993 grantees. Almost \$8.5 million was awarded to 142 proposals for fiscal 1993.¹⁰ The majority of the grants were for \$50,000 per year for 3 years. The largest grant awards were for \$150,000 over 3 years; the smallest grant award was \$20,000 over 3 years.

2. External Funding

HCFA encouraged grant applicants to seek external funding to complement grant funds and asked them to report any external funding support for a project. Grant review panels were instructed to consider external project funding as evidence of community coordination and to rank applicants with good community coordination higher. Thus, having external funding increased the likelihood that proposed projects would receive Federal funds.

The broad definition of external funding, the various methods used by hospitals to quantify "in-kind" support, and the softness of funding commitments suggest caution in interpreting data provided by hospitals on external funding.

Typical sources of external funding reported by applicants were the hospital itself and the hospital auxiliary. Many hospitals indicated that they intended to supplement grant funds with

¹⁰Among the grantees, 129 individual hospitals submitted 129 proposals, and 50 hospitals in 13 different consortia submitted 13 different proposals. Thus, HCFA approved the proposals of 179 hospitals.

funds they had already committed to the project or with funds that would be committed if they received a grant. Typically, nongrant monies were slated for equipment purchases needed for a project. Equipment costs often exceeded the one-third capital budget limit imposed by Congress on grant expenditures.

Another common source of proposed external funding was project revenue. Some hospitals made revenue projections and indicated that these revenues would be used to fund future project costs. Other hospitals indicated that they expected project revenues to make up the difference between expected costs and the amount requested from the grants program.

The maximum value of external funding for any 1993 grantee was \$5,247,362. Six of the 142 funded proposals (4 percent) proposed no external funding, and 23 of the 174 nonfunded proposals (13 percent) proposed no external financing.

D. COMPARISON OF APPLICANTS FROM 1989 THROUGH 1993

The total number of applicants for the RHCT grants program dropped, from 704 in 1989 to 502 in 1990, 445 in 1991, and 387 in 1992.¹¹ The number of 1993 applicants (394) represented a slight increase over previous years. The overall decrease in applicants from 1989 to 1993 was the result of three factors: (1) the pool of eligible hospitals was smaller because hospitals that were awarded grants in either 1991 or 1992 and received maximum continuation grant funding in 1993 could not immediately benefit from a 1993 award, and

¹¹These totals comprise all applicants, including hospitals that applied more than once.

hence had limited incentive to apply;¹² (2) some previous applicants that were not awarded grants became discouraged and did not apply again in 1993; and (3) the pool of hospitals that had never applied for an RHCT grant was shrinking. In addition, since 1991, grant applications for the Rural Health Outreach Grant Program were due at approximately the same time. Some small hospitals may have lacked the resources to apply to both programs and may have opted to forego applying for the RHCT program.

The average annual grant funding requested per applicant increased to a program high of \$44,412 during 1993. The lowest average annual grant funding per applicant occurred in 1992; applicants requested an annual average of \$39,799 (a total of \$119,378 during a 3-year period).

Since the RHCT grants program began in 1989, applications from the South census region have decreased and applications from the Midwest census region have increased (see Table V.2). The proportion of applicants from the South census region fell from 40 percent in 1989 to 29 percent in 1990. This proportion has remained between 28 and 31 percent, about 9 percentage points less than would be expected on the basis of the proportion of eligible hospitals in the region. Conversely, the proportion of applicants from the Midwest census region increased from 36 percent in 1989 to 46 percent in 1993. The proportion of applicants from the West census region rose briefly, from 18 percent in 1989 to 20 percent in 1991 and

¹²Hospitals with maximum funding in 1993 from a 1991 or 1992 award could secure future grant financing by receiving a 1993 award. A few grantees felt that this was enough of an incentive to apply in 1993.

TABLE V.2
DISTRIBUTION OF APPLICANTS BY REGION FOR THE
1989, 1990, 1991, 1992, AND 1993 GRANT APPLICANTS
(At Time of Award)

	1989	1990	1991	1992	1993
Number of Applicants	704	502	445	387	394
Percent Distribution by Region					
Northeast	6	3	4	2	4
Midwest	36	51	46	47	46
South	40	29	30	28	31
West	18	17	20	23	19

SOURCE: National Biosystems.

23 percent in 1992, but returned to 19 percent in 1993. The proportion of applicants from the Northeast census region remains small--between 2 percent (1992) and 6 percent (1989).

E. COMPARISON OF GRANTEEES FROM 1989 THROUGH 1993

The grantee selection process gave considerable weight to ensuring wide geographic distribution of grantee hospitals, which limits variability in the proportion of grants awarded by region. Nevertheless, there have been changes over time (see Table V.3). The proportion of awards in the Northeast has varied between 3 and 8 percent, with 3 percent in 1993. The proportion of awards in the South fell briefly during 1991 and 1992, from 34 percent of the total in 1989 to 23 percent in 1992--following the trend in the application rate. In 1993, the proportion of awards in the South rose to 31 percent. The proportion of awards in the Midwest has varied between 40 and 47 percent, with 45 percent in 1993. In the West, the percentage of awards has followed the percentage of applications closely, except in 1992, when it rose to 29 percent. This pattern can be partially explained by an award to a statewide consortium of seven hospitals in Nevada.

The average amount awarded for the first year of the 1993 grantees (\$47,960) was higher than that for all previous grantees. Until 1993, the 1989 grantees had received the highest average first-year funding. First-year funding for 1993 grantees exceeded that for 1989 grantees by \$3,099.

The percentage of grantees in funded consortium projects was 28 percent in 1993. The percentage in consortia rose from 21 percent to 29 percent between 1989 and 1990. Since then, it has varied between 26 and 28 percent.

TABLE V.3
COMPARISON OF AWARDS BY REGION FOR THE
1989, 1990, 1991, 1992, AND 1993 GRANTEES
(At Time of Award)

	1989	1990	1991	1992	1993
Number of Grantees	184	212	187	163	178
Average First-Year Funding Amount	\$44,861	\$44,212	\$43,708	\$42,059	\$47,959
Percent Distribution by Region					
Northeast	8	3	6	5	3
Midwest	40	46	47	43	45
South	34	33	29	23	31
West	19	18	18	29	21
Number of Consortia Projects	11	16	14	10	13
Percentage of Grantees in Consortia	21	29	26	28	28

SOURCE: National Biosystems.

NOTE: The application for Orange City Hospital in Iowa was approved by HCFA but not funded, because it requested no funds. The total number of approved applicants in 1993 was 179.

VI. THE SMALL-HOSPITAL PARADOX

One finding from the evaluation of the 1989 and 1990 grantees was paradoxical. The finances of the smallest hospitals (those with fewer than 30 licensed acute-care beds) failed to improve during the grant period. Data from the audited financial statements of the grantees showed that inpatient revenues fell for the smallest grantees, their outpatient revenues barely kept pace with national growth trends, and their operating margins failed to improve despite nationwide improvement in this measure. Yet the majority of the hospitals reported that the grant projects improved their financial situations (Wooldridge et al. 1994). To understand the source of this inconsistency, we interviewed 40 of the smallest grantees--twenty 1991 grantees and twenty 1992 grantees. These interviews were conducted in spring 1994, when the two waves of grantees would be in the third and second years of their grant projects, respectively. We asked the hospital administrators whether their grant projects would benefit their hospitals financially, and whether these financial improvements could be measured using the hospital's financial statements.

We found that the vast majority of the interviewed administrators (93 percent) thought the grant projects would improve the hospital's finances. However, only 55 percent thought the financial improvement would be apparent on the hospital's financial statement.

A. DO SMALL-HOSPITAL ADMINISTRATORS BELIEVE THE GRANT PROJECTS WILL IMPROVE THEIR HOSPITALS' FINANCES?

The vast majority of the small-hospital administrators (93 percent) reported that the grant projects had improved their hospital's financial performance. Only 3 of 40 projects--a farm safety program, a mental health outreach program, and a communications improvement project--were not expected to improve hospital finances. Administrators reported that some projects improved finances directly. For example, in hospitals with newly established home health agencies, rural health clinics, and physical therapy services, administrators explained that these new services generated direct revenues for the hospital. Most of these services were profitable, so they also improved hospital profit margins. Other projects improved hospital finances indirectly. For example, hospital administrators explained that staff education projects resulted in better management of hospital resources, which lowered costs and improved hospital operating margin.

B. DO SMALL-HOSPITAL ADMINISTRATORS THINK THEIR FINANCIAL STATEMENTS WILL REFLECT THESE IMPROVEMENTS?

Only 22 of the 40 hospital administrators (55 percent) thought their financial statements would reflect these financial improvements at the end of the grant period. Administrators cited two predominant reasons for the statements' failure to show financial improvements: (1) the projects' financial impacts are long term, not short term; and (2) other changes during the grant period have had a much larger effect than the grant project on hospital finances.

The grantees that undertook education or quality improvement projects were the most likely to think their projects' positive financial impacts would be felt for many years in the

future, but not necessarily in the short term. One hospital administrator explained that the board education project improved the hospital's decision-making capabilities, and this improvement had strengthened hospital finances. However, the full impact of this improvement will be realized long after the grant is over, because of the cumulative benefits of good decision making. Two hospitals in a consortium noted that financial benefits from their nurse education program--which will increase the supply of nurses and decrease the hospitals' reliance on expensive, temporary nurses--will occur only after participants graduate from the program. Because the nurses will graduate just as the grant program ends, the hospitals' finances will not reflect this improvement. Another consortium hospital noted that its joint quality assurance program had improved its reputation, but it will take time before the community responds to the improvement and utilizes the hospital more.

Other hospitals indicated that changing fortunes--both good and bad--would make it impossible to notice the small financial improvements from the grant. One hospital received a grant from the Essential Access Community Hospital/Rural Primary Care Hospital (EACH/RPCH) Program, which is larger than the RHCT grant (\$200,000 versus \$150,000). The administrator thought the positive financial effects from EACH/RPCH grant were much larger than the small revenue increases from its new RHCT grant-funded physical therapy unit. Thus, financial improvements resulting from the physical therapy unit would not be apparent on the hospital's financial statement. Another administrator reported that the grant-funded education program had increased the hospital's quality of care, utilization, and revenues. During the first year of the grant, however, the state raised its workers'

compensation rate, significantly increasing the hospital's costs. During the second year, the hospital had a prolonged staff walkout, significantly reducing utilization and revenue. As a result, the hospital's operating margin decreased significantly during the grant period, even though the grant project had helped the hospital financially. Another hospital administrator expected hospital finances to remain the same during the 3-year period, even though it successfully recruited two physicians with its grant funds. Two other physicians decided to leave during the same period, so hospital financial reports will not show utilization or financial improvements.

In conclusion, almost all of the smallest grantee administrators believe the grant projects have helped their hospitals financially. However, approximately half think these positive financial effects will be reflected in their financial statements; the other half do not. Financial effects will not be measurable because (1) the effects will be felt in the long run, not immediately after the grant project ends; and (2) other factors affecting hospital finances have had a much larger impact than the grant projects, obscuring effects from the grant projects. Difficulties in measuring financial changes at the smallest hospitals may account for the small-hospital paradox.

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APPENDIX A

FIRST-YEAR AWARDS TO 1993 GRANTEES

FUNDS AWARDED UNDER THE GRANT PROGRAM FOR
RURAL HEALTH CARE TRANSITION, 1993

State	Hospital Name	First-Year Funding (Dollars)
AL	Bibb Medical Center	45,000
AL	Bullock County Hospital	49,688
AL	DeKalb Baptist Medical Center	50,000
AL	Fayette County Hospital	45,000
AL	Greene County Hospital	45,000
AL	Hale County Hospital	50,000
AL	Hill Hospital	50,000
AL	Perry County Hospital	50,000
AK	Bartlett Memorial Hospital	50,000
AK	South Peninsula Hospital	50,000
AZ	Havasut Samaritan Regional Hospital	50,000
AZ	Marcus J. Lawrence Medical Center	50,000
AZ	Page Hospital	50,000
AZ	White Mountain Communities Hospital	10,000
AR	Baptist Memorial Hospital--Eastern Ozarks	50,000
AR	Baptist Memorial Hospital--Osceola	43,949
AR	Bradley County Memorial Hospital	50,000
AR	Conway County Hospital	50,000
AR	Fulton County Hospital	50,000
CA	Avalon Municipal Hospital	49,744
CA	Glenn General Hospital	50,000
CA	Needles-Desert Communities Hospital	50,000
CO	Family Health West	50,000
CO	Melissa Memorial Hospital	50,000
CO	Montrose Memorial Hospital	50,000
CO	Rangely District Hospital	50,000
CO	Sedgwick County Memorial Hospital	48,779
CO	St. Joseph's Hosp. & Nursing Home of Del Norte	49,521

State	Hospital Name	First-Year Funding (Dollars)
FL	Jay Hospital	50,000
FL	Madison County Memorial Hospital	50,000
GA	Clinch Memorial Hospital	50,000
GA	Saint Joseph's Hospital of Dahlonga	50,000
ID	Council Community Hospital	50,000
ID	St. Mary's Hospital	49,992
IL	Illini Community Hospital	50,000
IL	United Mine Workers of America Union Hospital	43,000
IN	Orange County Hospital	50,000
IA	Belmond Community Hospital	50,000
IA	Community Memorial Hospital	50,000
IA	Davis County Hospital	50,000
IA	Eldora Regional Medical Center	50,000
IA	Franklin General Hospital	50,000
IA	Greene County Medical Center	50,000
IA	Hancock County Memorial Hospital	50,000
IA	Holy Family Hospital	50,000
IA	Howard County Hospital	50,000
IA	Kossuth County Hospital	50,000
IA	Marengo Memorial Hospital	50,000
IA	Merrill Pioneer Community Hospital	50,000
IA	Mitchell County Memorial Hospital	50,000
IA	Myrtue Memorial Hospital	50,000
IA	Pella Community Hospital	50,000
IA	Pocahontas Community Hospital	50,000
IA	Sioux Center Hospital and Health Center	50,000
KY	Ness County Hospital District #2	50,000
KY	Berea Hospital, Inc.	47,000
KY	Carroll County Memorial Hospital	50,000
KY	Marcum & Wallace Memorial Hospital	45,434

State	Hospital Name	First-Year Funding (Dollars)
KY	Marshall County Hospital	50,000
KY	The James B. Haggin Memorial Hospital, Inc.	50,000
LA	Bunkie General Hospital	50,000
ME	Franklin Memorial Hospital	50,000
MD	Kent and Queen Anne's Hospital, Inc.	50,000
MI	Gerber Memorial Hospital	50,000
MI	Paul Oliver Memorial Hospital	50,000
MI	Scheuer Hospital	50,000
MN	Arlington Municipal Hospital	50,000
MN	Divine Providence Hospital & Home, Inc.	39,092
MN	Glencoe Area Health Center	50,000
MN	Itasca Medical Center	50,000
MN	Mahnomen County Hospital	50,000
MN	Ortonville Municipal Hospital	39,092
MN	Pipestone County Medical Center	39,092
MN	Renville County Hospital	50,000
MN	Tri-County Hospital, Inc.	50,000
MN	Tweeten/Lutheran Health Care Center, Inc.	50,000
MN	Weiner Memorial Medical Center	50,000
MN	Wheaton Community Hospital	50,000
MS	Baptist Memorial Hospital--Booneville	50,000
MS	Baptist Memorial Hospital--Union County	37,234
MS	Tippah County Hospital	49,484
MO	Cedar County Memorial Hospital	50,000
MO	John Fitzgibbon Memorial Hospital	50,000
MO	Lake of the Ozarks General Hospital	29,050
MO	Reynolds County Memorial Hospital	50,000
MT	Marcus Daly Memorial Hospital	50,000
MT	Sheridan Memorial Hospital	48,178

State	Hospital Name	First-Year Funding (Dollars)
NE	Chadron Community Hospital	35,200
NE	Community Hospital	50,000
NE	Community Memorial Hospital	49,719
NE	Dundy County Hospital	50,000
NE	Franklin Memorial Hospital	22,927
NE	Garden County Hospital	50,000
NE	Kearney County Community Hospital	26,810
NE	Oakland Memorial Hospital	49,930
NE	Plainview Public Hospital	42,000
NE	St. Francis Memorial Hospital	50,000
NE	Webster County Community Hospital	50,000
NV	Battle Mountain General Hospital	40,000
NV	Grover C. Dils Medical Center	50,000
NV	William Bee Ririe Hospital	50,000
NH	New London Hospital Association, Inc.	49,500
NM	Colfax General Hospital	43,480
NM	Espanola Hospital	43,480
NM	Guadalupe County Hospital	48,190
NM	Holy Cross Hospital	43,480
NM	Northeastern Regional Hospital	43,480
NM	Rehoboth McKinley Christian Hospital	50,000
NM	Union County General Hospital	43,480
NY	Delaware Valley Hospital	49,500
NC	Ashe Memorial Hospital, Inc.	50,000
NC	Bertie Memorial Hospital	50,000
ND	Carrington Health Center	50,000
ND	Griggs County Hospital	50,000
ND	Jacobson Memorial Hospital Care Center	47,048
ND	Linton Hospital	50,000
ND	St. Joseph's Hospital and Health Center	50,000

State	Hospital Name	First-Year Funding (Dollars)
OH	Kettering Mohican Area Medical Center	50,000
OK	Atoka Memorial Hospital	50,000
OK	Cleveland Area Hospital	31,500
OK	Cushing Regional Hospital	50,000
OK	Grove General Hospital	50,000
OR	Harney District Hospital	50,000
OR	Wallowa Memorial Hospital	50,000
PA	Punxsutawney Area Hospital	50,000
SC	Williamsburg County Memorial Hospital	50,000
SD	Belle Fourche Health Care Center	35,105
SD	Bennett County Hospital	34,388
SD	Bowdle Hospital	49,133
SD	Coteau Des Prairies Hospital	49,983
SD	Custer Community Hospital	49,976
SD	Deuel County Memorial Hospital	46,600
SD	Eureka Community Hospital	49,133
SD	Five Counties Hospital	49,074
SD	Hans P. Peterson Memorial Hospital	47,446
SD	Holy Infant Hospital, Inc.	49,133
SD	Lake Area Hospital	49,983
SD	Platte Community Memorial Hospital, Inc.	50,000
SD	Prairie Lakes Health Care Center	49,983
SD	Queen of Peace Hospital	50,000
SD	Southern Hills General Hospital	20,000
SD	St. Bernard's Providence Hospital	49,983
SD	Sturgis Community Health Care Center	36,000
TN	Baptist Memorial Hospital--Huntingdon	50,000
TN	Claiborne County Hospital	50,000
TX	Big Bend Regional Medical Center	50,000
TX	Deaf Smith General Hospital	50,000

State	Hospital Name	First-Year Funding (Dollars)
TX	Fairfield Memorial Hospital	50,000
TX	Gainesville Memorial Hospital	50,000
TX	Graham General Hospital	45,000
TX	Kimble Hospital	50,000
TX	Lavaca Medical Center	50,000
TX	Llano Memorial Hospital	50,000
TX	Otto Kaiser Memorial Hospital	50,000
TX	Polk County Memorial Hospital	50,000
TX	Stamford Memorial Hospital	50,000
TX	Val Verde Memorial Hospital	50,000
TX	Yoakum County Hospital	50,000
VT	Mt. Ascutney Hospital and Health Center	49,500
VA	Community Memorial Healthcenter	50,000
VA	Lee County Community Hospital, Inc.	50,000
VA	R.J. Reynolds - Patrick County Memorial Hospital	50,000
WA	Coulee Community Hospital	50,000
WA	Kittitas Valley Community Hospital	50,000
WA	Morton General Hospital	50,000
WA	Skyline Hospital	50,000
WV	Braxton County Memorial Hospital	50,000
WV	Broddadus Hospital Association, Inc.	50,000
WV	Montgomery General Hospital	50,000
WV	Preston Memorial Hospital, Inc.	49,500
WI	Burnett General Hospital	50,000
WI	Community Memorial Hospital	50,000
WI	Divine Savior Hospital	50,000
WI	Memorial Hospital of Lafayette County	49,944
WI	Oconto Memorial Hospital, Inc.	50,000
WI	Sacred Heart Hospital	20,000
WY	Star Valley Hospital	50,000
WY	Weston County Memorial Hospital & Manor	49,873

APPENDIX B

SCORE ADJUSTMENT PROCESS

APPENDIX B

SCORE ADJUSTMENT PROCESS

This appendix documents how scores of 1993 grant applications were adjusted to account for differences in the panels' scoring of applications, as well as how the adjusted scores were rescaled for easier interpretation. This work was done under Federal contract by National Biosystems.

To adjust the scores, the mean and standard deviation of the total scores for all proposals reviewed by each panel were calculated. Next, the panel mean was subtracted from each individual score, and this difference was divided by the panel standard deviation. Define X_{ip} as the individual proposal score assigned by the panel, X_p as the mean of all scores X_{ip} for that panel, and S_p as the standard deviation of the panel mean. The adjusted score (T_{ip}) is then calculated as:

$$T_{ip} = (X_{ip} - X_p)/S_p.$$

To rescale the adjusted scores so that they are easier to interpret, the maximum adjusted score and minimum adjusted score across all applicants were first identified. Define T_{max} as the maximum score, and T_{min} as the minimum. The rescaled score is then calculated as:

$$Score = \frac{T_i - T_{min}}{T_{max} - T_{min}} \cdot 100.$$

This rescaling process results in scores that range from 0 to 100, the same as the original range of the panel-assigned scores. The process maintains the distribution and ranking of the adjusted scores. -



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